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10/772,521	02/05/2004	Kyle Stickle	ANRI-08067US0	5395

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EXAMINER

RAHMAN, FAHMIDA

ART UNIT	PAPER NUMBER
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2116

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/772,521

Applicant(s)

STICKLE, KYLE

Examiner

Fahmida Rahman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 and 20 is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 6-19 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This final action is in response to communications filed on 2/6/07.
2. Claims 1, 4-7, 9, 16, 20 have been amended, claims 3, 21-27 have been canceled and no new claims have been added. Thus, claims 1-2, 4-20 are pending.

Claim Objections

Claim 1 is objected to because of the following informalities:

Claim 1 used the phrase "adapted to" which constitutes a use limitation and thus renders the claims indefinite as to what structure is embraced by the metes and bounds of the claim language. See MPEP § 2111.04.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 6-7 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Dally et al (US Patent Application Publication No. 2003/0086339).

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For claim 1, Dally et al teach the following limitations:

An apparatus for sampling an input signal (Fig 12), wherein the apparatus receives a clock signal synchronous with the input signal, the apparatus comprising:

- a synthesizer (42, 38, 44, 46 of Fig 16) for receiving the synchronous ([0002]) clock signal (bclk), wherein the synthesizer produces a synthesized signal (f_{UP}/f_{DN}) having a synthesized signal frequency dependent on the synchronous clock signal ([0020] and [0021], [0077]);
- a sampling module (22) coupled to the synthesizer, wherein the sampling module samples the input signal (19) based on the synthesized signal frequency (24 interpolates phase based on synthesized frequency f_{UP}/f_{DN} . The output of 24 is used to sample the input signal)
- a processing unit (101) coupled to the sampling module.

Dally et al do not explicitly teach the following limitations “wherein the processing unit is adapted to analyze a sampled point from the sampling module and arrange the sampling point in an eye diagram”.

However, the system of Dally et al is concerned with the sufficiency of eye opening ([0058 of page 3 of Dally et al). Therefore, the processing unit must be adapted to analyze a sampled point from the sampling module and arrange the sampling point in an eye diagram.

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For claim 2, Dally et al teach counter (combination of 30A and 24) sending strobe signal ("clock") to the sampling module after a predetermined count (38, 42).

For claims 6 and 7, 37B shows the processor that controls 38, which controls the count KxV and synthesizer frequency.

Claims 8-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dally et al (US Patent Application Publication No. 2003/0086339), in view of Applicant's Admission of Prior Art (AAPA).

For claim 8, Dally does not teach prescaler module. AAPA teaches the prescaler (note Fig 2 of AAPA). One ordinary skill would be motivated to use a prescaler module, since prescaling is necessary for shaping a signal.

For claim 9, Dally et al teach the following limitations:

An apparatus for analyzing an input signal, wherein the apparatus receives a clock signal having a clock frequency synchronous with the input signal, the apparatus comprising (Fig 12):

- a synthesizer (37) for receiving the clock signal (bclk), wherein the synthesizer produces a signal having a synthesizer frequency dependent on the clock frequency ([0020] and [0021]);

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- a counter (combination of 30A and 24) coupled to the synthesizer, the counter for receiving the signal and producing a strobe signal ("clock");
- a sampling module (22) coupled to the counter, the sampling module for sampling the input signal (19) upon receiving the strobe signal ("clock");

Although Dally et al couples a processor with sampling module, the processor does not arrange the sample point in a desired configuration.

AAPA teaches the following limitations:

a processor (70) coupled to the sampling module (60), wherein the processor analyzes a sample point from the sampling module and arranges the sample point in a desired configuration ([0008]) for display to a user of the apparatus ([0007] mentions that CPU processed the sampling points and waveform is acquired. [0006] mentions about the sampling oscilloscope that adopts the sampling system mentioned in [0007]. The oscilloscope of [0006] causes the trace to build up from left to right across the display).

It would have been obvious for one ordinary skill in the art at the time the invention was made to combine the teachings of Dally et al and AAPA. One ordinary skill in the art would have been motivated to include the processor to analyze sampling points, as the waveform produced by the processor is useful in many situations, such as jitter measurement.

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For claim 10, [0006] mentions that sampling oscilloscope causes the trace to build up from left to right across the display, which can be an eye diagram according to [0002].

For claim 11, 37B shows the processor.

For claim 12, Dally et al send strobe signal to the sampling module (the strobe signal for the sampling module is the clock signal from 24. Counter 30A provides necessary signal to produce the strobe signal from 24) after a predetermined count (42, 38).

For claim 13, sampling frequency clock is dependent on synthesized frequency and count made by 38 and 42.

For claim 14, 101 controls V.

For claim 15, Dally does not teach prescaler module. AAPA teaches the prescaler (note Fig 2 of AAPA). One ordinary skill would be motivated to use a prescaler module, since prescaling is necessary for shaping a signal.

For claim 16, Dally et al teach the following limitations:

A method of analyzing an input signal (Fig 12) comprising:

- receiving a clock signal (bclk) synchronous with the input signal ([0002]);

- generating a synthesized signal (f_{UP}/f_{DN}) from the clock signal (bclk), wherein the synthesized signal has a synthesized signal frequency (f_{UP}/f_{DN}); and
- sampling the input signal (22) dependent on the synthesized signal frequency
- analyzing a sample point from the input signal (26 analyzes sampling points to determine the early/late decisions)

Dally et al do not explicitly teach the following limitations "arranging the sampling point in an eye diagram".

Applicant admits that the following limitations exist in prior art:

arranging the sampling point in an eye diagram ([0007] mentions that CPU processed the sampling points and waveform is acquired. [0006] mentions about the sampling oscilloscope that adopts the sampling system mentioned in [0007]. The oscilloscope of [0006] causes the trace to build up from left to right across the display, which can be an eye diagram according to [0002]).

It would have been obvious for one ordinary skill in the art at the time the invention was made to combine the teachings of Dally et al and applicant's admission of prior art, since eye diagram is useful in the art to analyze the data and a common way to assess the integrity of the signal. The system of Dally et al is concerned with the sufficiency of eye opening ([0058 of page 3 of Dally et al), which is a motivation for the ordinary skill in the art to arrange the samples in eye diagram.

For claim 17, 42 and 38 adjust the clock frequency.

For claim 18, sampling is performed after a predetermined number of count ($V \times K$).

Claims 4, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dally et al., in view of AAPA, further in view of Owen.

For claim 4, Dally et al teach that the synthesizer frequency is the scaled version of input clock ([0077]) and depends on amount of samples per unit interval ([0066] describes that frequency difference depends on amount of samples per unit interval). However, Dally et al do not teach the $(N/N+1)$ factor.

Owen teaches a system where frequency is divided by that factor. One ordinary skill in the art would be motivated to combine the teachings as that would provide the design choice of the user.

Allowable Subject Matter

Claims 5 and 20 are allowable.

Response to Arguments

Applicant's arguments filed on 2/6/2007 have been fully considered but they are not persuasive.

Applicant argues that Dally cannot be combined with AAPA, as the nature of problem is unrelated to clock signal recovery but to improve signal sampling.

Examiner disagrees. Just like applicant, Dally et al also concerned about jitter and sufficient eye opening ([0057]-[0058]). Therefore, ordinary skill would be motivated to use an oscilloscope to verify the eye opening graphically.

Conclusion


THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fahmida Rahman whose telephone number is 571-272-8159. The examiner can normally be reached on Monday through Friday 8:30 - 5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's

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supervisor, Rehana Perveen can be reached on 571-272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Fahmida Rahman
Examiner
Art Unit 2116


REHANA PERVEEN
SUPERVISORY PATENT EXAMINER
4/16/07